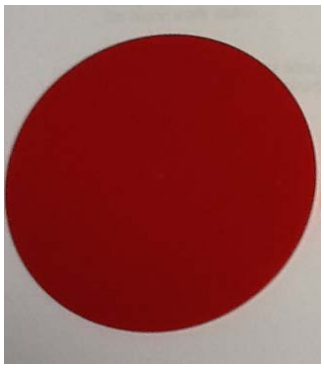
Fraction Circles Math Kit

Activity #1

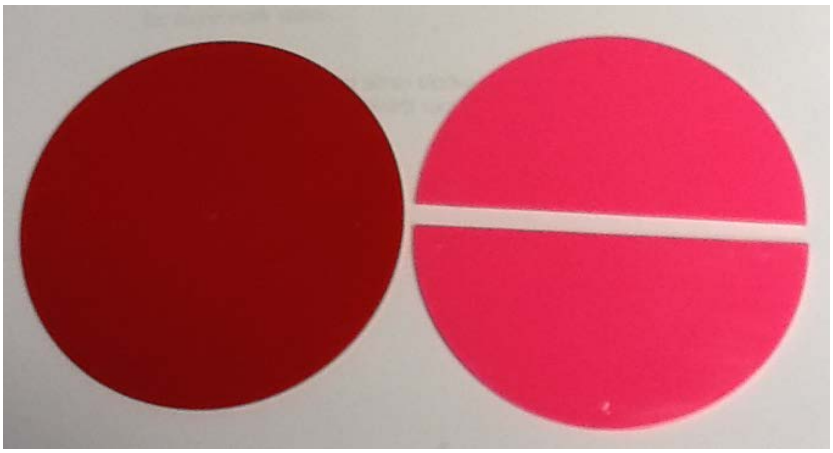
Directions

1. Which fraction circle piece represents one? What color is it? (Draw or trace it.)



The red circle represents one-whole unit and will be the most common answer. Students can select other pieces to represent one-whole unit, but ask them to explain their reasoning.

2. How can you show one-whole circle using the least number of pieces? (Show and draw your thinking.) What did you notice?



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3. How can you show one-whole circle using the most number of pieces? What did you notice? (Show and draw your thinking.)

Students should create a circle using the 12 black fraction circle pieces. Students will make a variety of observations. Did they observe the relationship between the number of pieces needed to make the circle and the size of the pieces?

4. How many different ways can you find to make one-whole circle using the fraction pieces? (Show and draw your thinking.) Use page 3 for more work space.

Students will create a variety of circles. Once students have shown their thinking, you may consider asking students to compare their circles to the red whole circle. If they are equivalent, then they are correct.

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Additional work space for #4.

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(Extension questions)

A. Were you able to create one-whole circle using multiple colored fraction pieces?

Answers may vary.

B. Which combination is the most challenging? Why?

Answers may vary.

C. If the red circle is a whole unit, how would you label each fractional piece? How did you know?

Red: 1 whole unit	**Pink: ½ (one-half)**	**Orange: 1/3 (one-third)**
Yellow: ¼ (one-fourth)	**Green: 1/5 (one-fifth)**	**Light Blue: 1/6 (one-sixth)**
Dark Blue: 1/8 (one-eighth)	**Purple: 1/10 (one-tenth)**	**Black: 1/12 (one-twelfth)**

D. How can you show one-half of a circle using the least number of pieces? (Show and draw your thinking.) What did you notice?

Using a pink fraction circle piece will show ½ of a circle using the least number of pieces.

E. How can you show one-half of a circle using the most number of pieces? (Show and draw your thinking.) What did you notice?

Using the 6 fraction circle pieces will show ½ of a circle using the most number of pieces.

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Activity #2

Situation #1

5 friends bake 4 round mini-cakes. How much cake will each friend get if they equally share the mini-cakes?

Build a model using the fraction circles to show how much cake each person will get. Once you have found your solution, trace the pieces to show your work for others to see.

Illustrations and combinations of fraction circle pieces will vary. The solution is 4/5 (four-fifths). 4/5 (four-fifths) can be shown using 4 green pieces; 1 pink piece, 1 purple piece, and 1 green piece; 2 yellow pieces and 3 purple pieces; etc. If their combination would perfectly fit into 4 green pieces, then their combination is accurate.

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Situation #2

Another group of friends is baking 7 round mini-cakes. The 8 friends will equally share the cake they bake. If you love eating cake, which group would you rather bake with?

Build a model using the fraction circles to show how much cake each person will get. Once you have found your solution, trace the pieces to show your work for others to see.

Illustrations and combinations of fraction circle pieces will vary. The solution is 7/8 (seven-eighths). 7/8 (seven-eighths) can be shown using 7 dark blue pieces; 1 pink piece and 3 dark blue pieces; 2 yellow pieces and 3 dark blue pieces; etc. If their combination would perfectly fit into 7 dark blue pieces, then their combination is accurate.

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Activity #3

Reflect and respond to at least two prompts below.

- My drawings were similar to _____, because_____.
- My drawings were different from _____, because _____.
- I learned _____ about _____.
- Fractions circles helped me show my thinking by...

Replies will vary.

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Activity #4

Technology Connection

Identifying Fractions using Circles

http://www.visualfractions.com/IdentifyCircles/identifycircles.html

National Library of Virtual Manipulatives-Fraction Pieces

http://nlvm.usu.edu/en/nav/frames_asid_274_g_2_t_1.html?open=activities&from=grade_g_2.html

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